REMARKS/ARGUMENTS

The above identified patent application has been amended and reconsideration and reexamination are hereby requested.

Claims 1 - 16, 22 - 26 and 32 - 34 are now in the application. Claims 17 - 21 and 27 - 31 have been previously cancelled. Claims 1, 2, 8, 16, 26, 33 and 34 have been amended.

The Applicants have amended Claims 1, 2, 8, 16, 26, 33 and 34 to broaden the scope of the invention to which the Applicants are believed to be entitled. No new matter has been added.

The Examiner has rejected Claims 1 - 12, 16, 22 - 26 and 32 under 35 U.S.C. §102(b) as being anticipated by Arango. The Examiner has also rejected Claims 33 and 34 under 35 U.S.C. §102(b) as being anticipated by Jonas et al. The Examiner has found Claims 13 - 15 to contain allowable subject matter.

The Applicants' amended independent Claim 1 calls for ... a)locating the first switch or the second switch at an end terminal of a user for connecting the end terminal to a packet-switching network or a line-switching network, the first switch having access to a line-switching network; b)establishing a connection through the line-switching network from the first switch to an access point of the packet-switching network ... d)packeting of the data into data packets if the data do not yet exist as data packets, and packet-switching transferring of the data packets through the packet-switching network from the access point to the second switch; ... f) establishing the line-switching connection, during an existing transfer, from the first switch to the second switch through the line-switching

network with a presence of the control signal, if the line-switching connection is not yet present; ...

The Applicants' amended independent Claim 2 calls for ... a) locating the first switch or the second switch at an end terminal of a user connecting the end terminal to a packet-switching network or a line-switching network, the first switch having access to the line-switching network and the packet switching network; b) packeting the data into data packets in the first switch if the data does not yet exist as data packets; ... e) establishing the line-switching connection, during an existing transfer, through the line-switching network to the second switch with a presence of the control signal, if the line- switching connection is not yet present; ...

The Applicants' amended independent Claim 33 calls for: ... a) locating the first switch or the second switch at an end terminal of a user for connecting the end terminal to a packet-switching network or a line-switching network, the first switch having access to a line-switching network; b) establishing a connection through the line-switching network from the first switch to an access point of the packet-switching network; ... d) packeting of the data into data packets if the data do not yet exist as data packets, and packet-switching transferring of the data packets through the packet-switching network from the access point to the second switch;... f) establishing the line-switching connection, during an existing transfer, directly from the first switch to the second switch solely through the line-switching network with a presence of the control signal, if the line-switching connection is not yet present; ...

The Applicants' amended independent Claim 34 calls for: ... a) locating the first switch or the second switch at an end terminal of a user connecting the end terminal to a packet-switching network or a line-switching network, the first switch having access to the line-switching network and the packet switching network; b) packeting the data into data packets in the first switch if the data does not yet exist as data packets;... e) establishing the line-switching connection, during an existing transfer, directly from the first switch to the second switch solely through the line-switching network with a presence of the control signal, if the line-switching connection is not yet present; ...

As such, the Applicants submit that Claims 1, 2, 33 and 34 are not anticipated by Arango or Jonas et al. under 35 U.S.C. §102(b).

To assess the present claimed invention in view of the Examiner's rejection, some technical background understood by those skilled in the art might prove helpful.

Basically, three kinds of routers/switches must be distinguished, which differ from each other fundamentally in terms of their functionalities and interfaces:

a) "CPE routers" (CPE = customer premises equipment),

b) "POP routers" (POP = point of presence, POPs are frequently referred to by the term "access points"), and

c) "WAN routers" (WAN = wide area network).

Now turning to the Arango and Jonas et al. references cited by the Examiner:

1. Arango

Arango has been discussed in detail in responses to previous office actions, wherein the Applicants have submitted that Arango does not describe, suggest or teach locating the access point 220, 240 at an end terminal.

The Examiner's position is that access points 220, 240 can be located at an end terminal. The Applicants present further reasons why this cannot be the case.

In Arango access points 220, 240 are connected to the Internet backbone via communications links 231, 232 (see col. 9, lines 33 to 38). It is clear to those skilled in the art that a link to the Internet backbone is a broadband link. A broadband link to the Internet backbone, however, is provided by a POP router only, which is part of the network, and not by a router located at an end terminal. A router located at an end terminal needs to connect to a POP router first and does not have broadband access directly into the Internet backbone. Accordingly, the skilled person would understand that access points 220, 240 connected to the broadband Internet backbone are not located at the end user.

Further, regarding claims 1 and 33, these claims recite establishing a connection through the line-switching network from the first switch (located at an end terminal of a user) to an access point of the packet-switching network. If the Examiner were correct and the access points 220, 240 were located at an end terminal, this feature would not be present in Arango such that a connection through the line-switching network is established from the first switch to an access point of the

packet-switching network. In such a case, the access points 220, 240 would always be connected to the packet-switching network 230 via links 231, 232. Therefore, it would not be possible to establish a connection through the line-switching network to an access point of the packet-switching network. The line-switching network in Arango is the guaranteed bandwidth network 260. Clearly, if access point 220 were located at the end terminal of a user, guaranteed bandwidth network 260 would not be involved to transmit data from the switch/access point 220 to an access point of the packet-switching network.

Therefore, the Applicants submit that Arango does not disclose or suggest locating a switch at an end terminal of a user, nor establishing a connection through the line-switching network from the switch to an access point of the packet-switching network.

2. Jonas et al.

Jonas et al. refers exclusively to POP routers. This follows, e.g., from its claim 1 and claim 10, both of them imposing the very specific restrictions, that "... said first router and said second router being permanently coupled to the packet-switched network via a packet-switched connection ..." This restriction of Jonas et al. is applicable only to POP routers, because:

a) No CPE router or WAN router is permanently coupled to the packet-switched network, but is occasionally de-/recoupled from/to the packet-switched network;

b) As opposed to CPE routers and WAN routers, only POP routers must by any means remain permanently coupled to the packet-switched network, otherwise the packet-switched network would not be accessible for those thousands or ten thousands of its users in the region serviced by this POP, and no manager whatsoever may afford such down times of a POP; and

c) Neither CPE routers nor WAN routers are coupled to the packet-switched network via packet-switched connections, for these two kinds of routers this coupling is performed simply by data links between them and the adjacent routers of the packet-switched network. Only POP routers are permanently coupled to the packet-switched network (more precisely: to its service provider) via a packet-switched connection, because of the inevitable needs (of the service provider) of identification of users granted access to this (his) POP and the inherent accounting/billing/invoicing requirements.

However, the independent claims contain the feature "... locating the first switch or the second switch at an end terminal of a user for connecting the end terminal to a packet-switching network or a line switching network..." This feature defines the switch of the claims to be a CPE switch. The Applicants submit that Jonas et al. does not describe, teach or suggest that the routers 20, 21 are located at the end terminal of a user (host). This is clear for the embodiment described with respect to Figure 1. In particular, it is stated that the host 1, 2 are connected via a telephone or ISDN line to the router 20, 21. Also, from the above citation that the routers are permanently coupled to the packet-switched network it is

clear that the routers 20, 21 are POP routers and not located at an end terminal.

Jonas et al. includes two very vague wordings which possibly, at a first glance, might be regarded as being of relevance for the question under consideration, namely:

a) "..., alternate configurations are also available, such as one or more of the hosts being directly connected to the Internet as a router or gateway computer." (Column 4, Lines 11 and 12) and

b) "..., both the source and destination routers 20 and 21 may be physically the same computer as the source host 1 and the destination host 2, respectively." (Column 6, Lines 18-20). However, a careful analysis shows that these wordings actually do not suggest at all locating the router/switch at an end terminal. Both statements do not disclose any specific information on CPE routers. Without distinguishing between the three kinds of routers previously discussed above, both statements are vague such that they need additional interpretation. To further interpret these statements, a further look at the Jones et al. disclosure is made. Jonas et al. does not disclose any information concerning the question, whether a router's interface towards the Internet, after physically locating it into an adjacent host computer, as indicated by these two wordings, but also when considering an additional router in the host computer concerned, should remain unchanged, i.e., should stay the same as defined in Jonas et al., or whether this interface should be changed in such a way as to look like the interface between the host computer and the router

in Jonas et al. The only disclosed information in Jonas et al. referring to this kind of "tight co-locations of hosts and routers" is provided by its claim 7, which reads as follows: "The method for the transmission of data packets of claim 1, wherein said first router comprises said source computer, said transmission from said source computer to said router comprising an interprocess communication within said router." Here the router (and its interconnection with the Internet) is obviously considered to conform to its claim 1, i.e., it is a POP router (as explained above) and not a CPE router. Moreover, the host computer is located within this POP router. For this configuration the above two wordings do apply, indeed.

Further, the Applicants submit that there is no reason to assume that the features of the Jonas et al. claims 1 and 10, namely: "... said first router and said second router being permanently coupled to the packet-switched network via a packet-switched connection ...." should not apply to the alternatives mentioned in the two wordings identified above. This also shows that Jonas et al. discloses only locating the host at the POP router 20, 21.

Thus, the Applicants submit that Jonas et al. only discloses (by means of the two quoted wordings and its claim 7, which corresponds to these two wordings) a configuration comprising a tight co-location of a host and a POP router, at the POP router. It does not disclose a configuration comprising a tight co-location of a host and a CPE router, i.e., it does not disclose locating a first router/switch at an end terminal of a user.

The Applicants believe that there is a very good reason why the Jonas et al. does not disclose any information concerning the latter type of its configuration as being part of the CPE. For this type of configuration, the Jonas et al. router's interface towards the Internet, and even more its functionality, would necessarily need to be changed in such a way as to:

a) make the interface look like the host computer's interface towards the Jonas et al. router; and

b) from a functional point of view, meet the requirements of a CPE router, which are vastly different from those of a POP router.

Thus, any such change inevitably has a serious impact on the performance as well as on the functionality of the router, i.e., may make it a quite different router, and, therefore, cannot be interpreted as being part of the meanings of the two wordings quoted above. In any case, this fact of an indispensable and very serious change of the POP router's interface and its functionality (to what is indispensably needed by a CPE router)is not anticipated or suggested by the two wordings quoted above. Consequently, their only disclosure is the one referred to by claim 7 of Jonas et al. As such, both wordings therefore be deemed to refer to POP routers.

Summarizing, the feature of "... locating the first switch or the second switch at an end terminal of a user for connecting the end terminal to a packet-switching network or a line switching network..." of the independent claims is not described, taught or suggested in Jonas et al.

Further, the independent claims contain the feature "... packeting of the data into data packets if the data do not yet exist as data packets..." Jonas et al. from the outset focuses on data packet transmissions (see the first line of its ABSTRACT). This is made quite explicit in its SUMMARY OF THE INVENTION in Column 3, Line 35: "The present invention is directed to a method and system for routing data packets between host computers ...". This remains the focus throughout, including its claim 1 ("A method for the transmission of data packets ...") and its claim 10 ("A method for transmitting data packets ..."). Throughout Jonas et al. there is not a single hint as to who might have performed already this packetizing of the information to be transmitted. In particular, it does not tackle the problem of packetizing/repacketizing appropriately the information to be transmitted, in case it is not yet or only inappropriately packetized. The packetizing issue is not addressed at all in the Jonas et al. Instead, the Jonas et al. is restricted to data packet transmissions. Therefore, the Applicants submit that Jonas et al. does not describe, teach or suggest that the data are packetized if they do not yet exist as data packets.

Still further, the independent claims contain the feature establishing the line-switching connection during an existing transfer with a presence of the control signal. According to the invention, it is possible to achieve a dynamic change-over from a packet-switching connection to a line-switching connection without interrupting the connection (see page 5, lines 13-16 of the substitute specification. Jonas et al., on

the other hand, is restricted to a priori transmission decisions, i.e., a change-over during an existing transfer is not possible. Jonas et al. from the outset is restricted to a priori decisions concerning its packet transmissions (see the 7th line of its ABSTRACT wherein: "The source computer designates data packets to be transmitted over the bypass circuit-switched telephone network."). This is made quite explicit in its SUMMARY OF THE INVENTION right at its beginning ("The object of the present invention is to provide a method and system for the automatic bypass for hosts ....."). This continues throughout Jonas et al., including its claim 10 wherein it states: "...designating said data packets as requiring transmission with minimal delay; transmitting said minimal delay data packets from said source computer to said first router; detecting said minimal delay data packet designation at said first router; ..." Thus, the data packets that are transmitted over the circuit-switched connection are identified at the very beginning (a priori) at the source computer. Throughout Jonas et al. there is not a single hint as to whether this a priori decision at the source computer (host 1) concerning the transmission of a particular packet may be altered by the first (source) router 20. Thus, it will always obey this a priori decision, with the slight exception, that this decision may be delegated to it by certain applications and this delegation being subject to a very specific decision algorithm, as specified in the final paragraph on Column 5: "Certain applications may wish to dynamically take advantage of both the inherent cost benefit of using the packet-switched

Internet and the minimal delay time of the circuit-switched telephone networks. This is accomplished by having the system monitor the transmission delay between the source router 20 and the destination router 21. If this delay rises above a threshold value the source router 20 will establish a connection over the bypass network 30. ...". It is to be noted, though, that also in case of such applications, the transmission decision is performed a priori by the applications. Thus, Jonas et al. does not allow the first/source router to care about additional information, which normally might be of only limited help to an application system, such as about current service times and/or current costs of the co-existing circuit-switched network at that very moment, possibly changing very quickly but being instantly available from some network management system, and base the decision of which network to use for the actual transmission of a data packet on this additional information. This global scheduling lies completely outside of the context of the Jonas et al.

And still further, claims 1 and 33 recite establishing a connection through the line-switching network from the first switch (located at an end terminal of a user) to an access point of the packet-switching network. As discussed above, Jonas et al. does not disclose locating the switch/router 20 at an end terminal of a user. Accordingly, a connection through the line-switching network from the first switch/router to an access point of the packet-switching network is not established. The POP router 20 of Jonas et al. represents an access point and is already connected to the packet-switching network.

If, only for the sake of argument, the two wordings discussed above in the Jonas et al. disclosure could suggest locating router 20 as a CPE router at an end terminal of a user, it would then, however, not make any sense that from such router a connection through a line-switching network to an access point of the packet-switching network is established. Jonas et al. states that the router is permanently coupled to the packet-switched network, as discussed above. With the router being permanently coupled to the packet-switching network, of course, there is no need to establish a connection through the line-switching network from the router to an access point of the packet-switching network.

Accordingly, the Applicants submit that Claims 1, 2, 33 and 34 are not anticipated by Arango or Jonas et al. under 35 U.S.C. §102(b).

Claim 3 is dependent on claims 1 or 2. Claim 4 is dependent on claims 1 or 2. Claim 5 is dependent on claim 1. Claim 6 is dependent on claim 1. Claim 7 is dependent on claims 1 or 2. Claim 8 is dependent on claims 1 or 2. Claim 9 is dependent on claim 1. Claim 10 is dependent on claim 9. Claim 11 is dependent on claims 9 or 10. Claim 12 is dependent on claim 11. Claim 13 is dependent on claims 1 or 2. Claim 14 is dependent on claim 13. Claim 15 is dependent on claim 14. Claim 16 is dependent on claim 1. Claim 22 is dependent on claim 2. Claim 23 is dependent on claim 22. Claim 24 is dependent on claims 22 or 23. Claim 25 is dependent on claim 24. Claim 26 is dependent on claim 2. Claim 32 is dependent on

claims 1 or 2. As such, these dependent claims are believed allowable based upon Claims 1 or 2.

Accordingly, in view of the above amendment and remarks it is submitted that the claims are patentably distinct over the prior art and that all the rejections to the claims have been overcome. Reconsideration and reexamination of the above Application is requested.

Respectfully submitted,
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